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Attorney Reference Number 4810-58563
Application Number 09/787,962

acid condensing enzyme has an amino acid sequence that is at least 70% identical to an *Arabidopsis* KCS2 amino acid sequence when optimally aligned; or

c) the nucleic acid coding sequence hybridizes under stringent conditions to a complement of the *Arabidopsis* KCS2 coding sequence shown beginning at position 1046 of SEQ ID NO: 1; or

d) the nucleic acid coding sequence is at least 70% identical to the *Arabidopsis* KCS2 coding sequence shown beginning at position 1046 of SEQ ID NO: 1 when optimally aligned.

2. (amended) The recombinant nucleic acid molecule of claim 1 wherein the nucleic acid coding sequence is derived from the *Arabidopsis* KCS2 coding sequence shown beginning at position 1046 of SEQ ID NO: 1.

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3. (reiterated) The recombinant nucleic acid molecule of claim 1 wherein the plant very long chain fatty acid condensing enzyme catalyses the condensation of malonyl-CoA with a C16, C18, C20 or C22 acyl-CoA, wherein the plant very long chain fatty acid condensing enzyme has an amino acid sequence that is at least 70% identical to the *Arabidopsis* KCS2 amino acid sequence when optimally aligned.

4. (amended) The recombinant nucleic acid molecule of claim 1 wherein the nucleic acid coding sequence hybridizes under stringent conditions to the complement of the *Arabidopsis* KCS2 coding sequence shown beginning at position 1046 of SEQ ID NO: 1.

5. (amended) The recombinant nucleic acid molecule of claim 1 wherein the nucleic acid coding sequence is at least 70% identical to the *Arabidopsis* KCS2 coding sequence shown beginning at position 1046 of SEQ ID NO: 1 when optimally aligned.

6. (amended) The recombinant nucleic acid molecule of claim 1 wherein the nucleic acid coding sequence is at least 90% identical to a wild-type *Arabidopsis* KCS2 coding sequence shown beginning at position 1046 of SEQ ID NO: 1 when optimally aligned.

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7. (amended) The recombinant nucleic acid molecule of claim 1 wherein the nucleic acid coding sequence is at least 95% identical to a wild-type *Arabidopsis KCS2* coding sequence shown beginning at position 1046 of SEQ ID NO: 1 when optimally aligned.

8. (amended) An isolated nucleic acid molecule comprising a nucleic acid coding sequence that encodes a plant long chain fatty acid condensing enzyme, wherein:

a) the nucleic acid coding sequence is derived from an *Arabidopsis KCS2* coding sequence shown beginning at position 1046 of SEQ ID NO: 1; or

b) the plant long chain fatty acid condensing enzyme catalyses the condensation of malonyl-CoA with a C16, C18, C20 or C22 acyl-CoA, wherein the plant very long chain fatty acid condensing enzyme has an amino acid sequence that is at least 70% identical to an *Arabidopsis KCS2* amino acid sequence when optimally aligned; or

c) the nucleic acid coding sequence hybridizes under stringent conditions to a complement of the *Arabidopsis KCS2* coding sequence shown beginning at position 1046 of SEQ ID NO: 1; or

d) the nucleic acid coding sequence is at least 70% identical to the *Arabidopsis KCS2* coding sequence shown beginning at position 1046 of SEQ ID NO: 1 when optimally aligned.

9. (amended) The isolated nucleic acid molecule of claim 8, wherein the nucleic acid coding sequence is derived from the *Arabidopsis KCS2* coding sequence shown beginning at position 1046 of SEQ ID NO: 1.

10. (reiterated) The isolated nucleic acid molecule of claim 8, wherein the plant long chain fatty acid condensing enzyme catalyses the condensation of malonyl-CoA with a C16, C18, C20 or C22 acyl-CoA, wherein the plant very long chain fatty acid condensing enzyme has an amino acid sequence that is at least 70% identical to an *Arabidopsis KCS2* amino acid sequence when optimally aligned.

TMH:jlb 03/26/03 177297.doc
PATENT

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11. (amended) The isolated nucleic acid molecule of claim 8, wherein the nucleic acid coding sequence hybridizes under stringent conditions to a complement of the *Arabidopsis KCS2* coding sequence shown beginning at position 1046 of SEQ ID NO: 1.

12. (amended) The isolated nucleic acid molecule of claim 8, wherein the nucleic acid coding sequence is at least 70% identical to the *Arabidopsis KCS2* coding sequence shown beginning at position 1046 of SEQ ID NO: 1 when optimally aligned.

13. (amended) The isolated nucleic acid molecule of claim 8, wherein the nucleic acid coding sequence is at least 90% identical to a wild-type *Arabidopsis KCS2* coding sequence shown beginning at position 1046 of SEQ ID NO: 1 when optimally aligned.

14. (amended) The isolated nucleic acid molecule of claim 8, wherein the nucleic acid coding sequence is at least 95% identical to a wild-type *Arabidopsis KCS2* coding sequence shown beginning at position 1046 of SEQ ID NO: 1 when optimally aligned.

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15. through 23. (Cancelled herein)

24. (previously amended) A transgenic plant comprising the recombinant nucleic acid molecule of claim 1.

25. (reiterated) A part of the transgenic plant of claim 24.

26. (reiterated) The part of the transgenic plant of claim 25, wherein the part is a seed.

27. (reiterated) The transgenic plant of claim 24, wherein the transgenic plant has a modified phenotype compared to a non-transgenic plant of the same species.

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28. (previously amended) A transgenic cell comprising the recombinant nucleic acid molecule of claim 1.

29. (reiterated) The transgenic cell of claim 28, wherein the cell is a plant cell.

30. (previously amended) A method of producing a transgenic plant comprising introducing into the plant the isolated nucleic acid molecule of claim 8.

31. (amended) A progeny plant produced by sexual or asexual propagation of the transgenic plant produced by the method of claim 30, and which comprises the isolated nucleic acid molecule.

32. (Cancelled herein)

33. (previously amended) A recombinant vector comprising the recombinant nucleic acid molecule claim 1.

34. through 37. (Cancelled herein)

38. (new) An isolated nucleic acid molecule, comprising the *Arabidopsis KCS2* coding sequence shown at position 1046 to position 2509 of SEQ ID NO: 1.

39. (new) An isolated nucleic acid molecule, comprising a nucleic acid sequence encoding the plant long chain fatty acid condensing enzyme encoded by the *Arabidopsis KCS2* coding sequence shown at position 1046 to position 2509 of SEQ ID NO: 1.

Remarks

Telephone Interview

Applicants thank Examiner McElwain for a telephone interview with the undersigned on March 11, 2003. During that interview, the restriction requirement was discussed. In addition,